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REPORT NO. [redacted]
202270

INFORMATION REPORT

COUNTRY Germany (Russian Zone)

DATE DISTR. 26 May 1948

SUBJECT Gas Turbine-Driven Locomotive Designed by Brückner & Kanis, Dresden

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PLACE ACQUIRED [redacted]

NO. OF ENCLS. (LISTED BELOW)

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SUPPLEMENT TO REPORT NO.

[redacted]

1. The firm Brückner & Kanis in Dresden, named Konstruktionsbüro No. 3 of the Technical Section for Construction of Transport Machinery of the SMA, Berlin-Baumschulenweg, Rodelborgweg 6, is working on the designing of a gas turbine for a locomotive. The following are some of the technical data:

2. The gas turbine-driven locomotive will be built in Wildau, the gas turbine (driving mechanism) with combustion chamber and gears at Brückner & Kanis in Dresden, and the electrical section in the electric rail division of Siemens & Schuckert. The work at Siemens & Schuckert on the electrical section has progressed the furthest, but no delivery has been made as yet because the permission of the English control authorities is lacking.

3. The operational data of the turbine are as follows:

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Next Review Date: 2008

Total Unit:

Specific consumption of fuel at outside temperature of -20°C: about 0.343 kg/h.p./hour
at outside temperature of + 40°C: about 0.364 kg/h.p./hour

Condenser:

Normal "Luftdurchsatzgewicht": about 48.7 kg./s.
Maximum air temperature before the condenser: about + 40°C.
Normal air temperature before the condenser : + 20°C.
Minimum air temperature before the condenser : - 40°C.
Normal air temperature behind the condenser : about + 171°C.
Normal outlet pressure: 3.59 atmospheres
Normal number of revolutions: 4,500 r.p.m.

2 Combustion Chambers

Normal amount of fuel per combustion chamber: about .215 kg per second
Temperature of gas at the burner: about 2,000°C.
Amount of air for combustion for each combustion chamber: about 3.64 kg per second : about 2.82 Nm^3 per second
Amount of cooling air per combustion chamber : about 20.74 kg. per second = 16.05 Nm^3 per second

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Turbine:

Normal entry temperature of gas at full load: 620°C
Normal entry pressure of gas at full load: 3.31 ata
Back pressure: 1.05 ata
Normal exit temperature of gas at full charge: 410°C
Normal number of turbine revolutions: 4,500 per minute
Normal number of generator revolutions: 1,500 per minute
The turbine is said to develop 4,500 h.p.

Measurements:

Height of combustion chamber:	ca. 1800 mm.
Diameter of combustion chamber:	ca. 500 mm.
Connection line between combustion chamber and turbine:	2 x 480 mm.
Exhaust braces of the turbine (2 parts):	2 x 800 x 750 mm.

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